299. 1939 ; A.D J. Meeuse in Blumea 5 : 69. 1942 ; Brenan in Kew Bull. 5 : 223. 1950 (comb. ascrib. to Schauer 1847) ; Hepper in Huber *et al.*, Fl. W. Trop. Africa 2 : 484. 1963 (comb. ascrib. to Schauer 1847) ; Mold. in Ann. Missouri Bot. Gard. 60 : 77. 1973, excl. syn. *S. dichotoma* (Ruiz Lopez & Pavon) Vahl 1804 ; Jafri & Ghafoor in Nasir & Ali, Fl. W. Pakistan 77 : 14. 1974 ; Nair *et al.*, in J. Bombay Nat. Hist. Soc. 79 : 230. 1982 (comb. ascrib. to Schauer 1847).

Verbena cayennensis Rich. in Actes Hist. Soc. Nat. Paris 1 : 105. 1792.—*Type* : Guyane-Francaise, 1792, *M. Leblond* 356 (G, photo!).

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We are thankful to Dr. N. P. Balakrishnan, formerly Joint Director, Botanical Survey of India, Coimbatore, for his encouragment ; the Director, Conservatoire et Jardin Botaniques, Geneve, for sending a photograph of the type ; Dr. D. H. Nicolson (US), for his opinion on the original draft, and the anonymous reviewer for his magnanimous criticism and help. A.R. is thankful to the Director, Botanical Survey of India, for a senior research fellowship.

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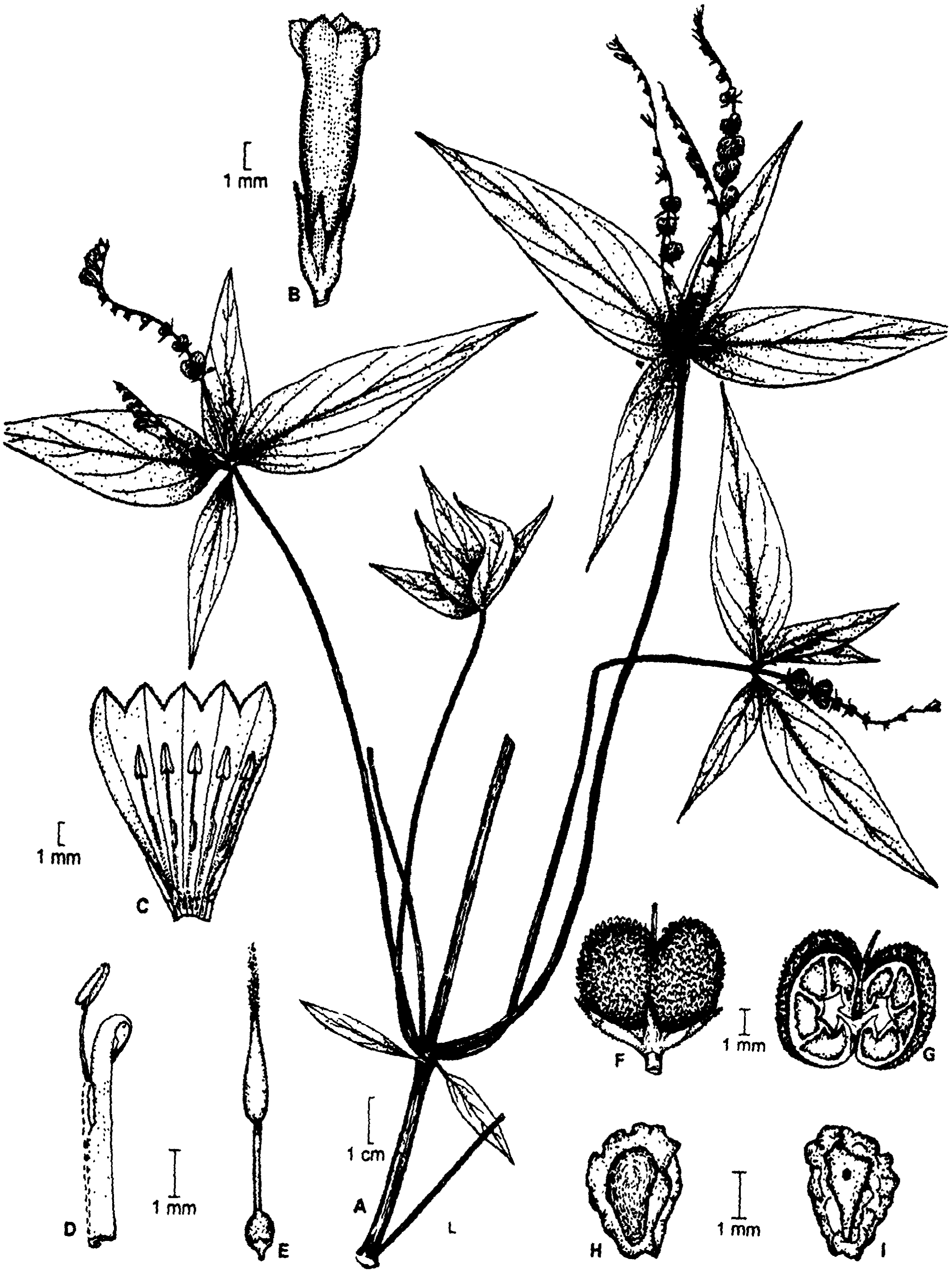
SPIGELIA ANTHELMIA L. (SPIGELIACEAE) — NEW TO THE FLORA OF PENINSULAR INDIA

The Gulf of Mannar Biosphere Reserve was explored for a comprehensive flora. Material of a certain characteristic herbaceous species, collected at the Tuticorin harbour, located at the southern end of the East Coast, the like of which did not exist at MH, could not be determined initially with the help of Indian floras. Later on, with the help of an expert and floras of neighboring regions it was determined as *Spigelia anthelmia* L. of the Spigeliaceae, a native of South America. A subsequent perusal of more recent Indian literature showed that Oomachan and Shrivastava (1987) had earlier reported this as an addition to the flora of India from Madhya Pradesh. However, as the description given by Oomachan and Shrivastava (1987) seems to have been based mostly on the earlier one by Leenhouts (1962), and certain figures provided by them are at variance, a detailed description based on the material collected in the Gulf of Mannar and an illustration are provided. Critical notes are presented on certain morphological features as well as ecology. The probable entry route which the earlier Indian authors did not touch upon is discussed.

Spigelia anthelmia L., Sp. Pl. : 149. 1753; Leenhouts in Steenis, Fl. Males. I, 6: 376. 1962; Oomachan & Shrivastava in J. Bombay Nat. Hist. Soc. 84 : 730. 1987; H. Naithani, Fl. Pl. India, Nepal, Bhutan : 290. 1990 (Fig. 1 A I).

Annual herb, up to 45 cm high; stem terete, 2 5 mm across, glabrous, fluted; internodes 4 - 20 cm long; branches opposite, 2 6 at each node. Leaves sessile, opposite-decussate, terminal, 4 (-6) clustered at apex with almost invisible internodes and basal most pair of leaves connected by interpetiolar stipules, ovate-lanceolate, decurrent at base, entire, and usually minutely bristly along margins above, attenuate at apex, 3 13 × 1 6 cm, scabrid above, nerves up to 8 pairs, minutely scabrous on nerves beneath; stipules triangular, obtuse at apex. Inflorescence a monochasial scorpioid cyme, trichotomous; the terminal one up to 15 cm long, up to 50-flowered; lateral ones 5 8 cm long, 16 26-flowered. Flowers actinomorphic, bisexual; bracts linear, *ca* 2.5 mm long. Calyx 5-lobed, persistent; lobes linear-lanceolate, acute, unequal, 2.5 4 × 0.2 - 0.4 mm, basally connate for *ca* 0.5 mm, 1-nerved, minutely spinulose along margins and nerve. Corolla



Figs.1. (A-I) : *Spigelia anthelmia* L. : A. Habit, B. Flower, C. Corolla split open, D. Stamen with a bit of corolla, E. Gynoecium, F. Capsule, G. Capsule L.S. H & I. Seed dorsal and ventral views.

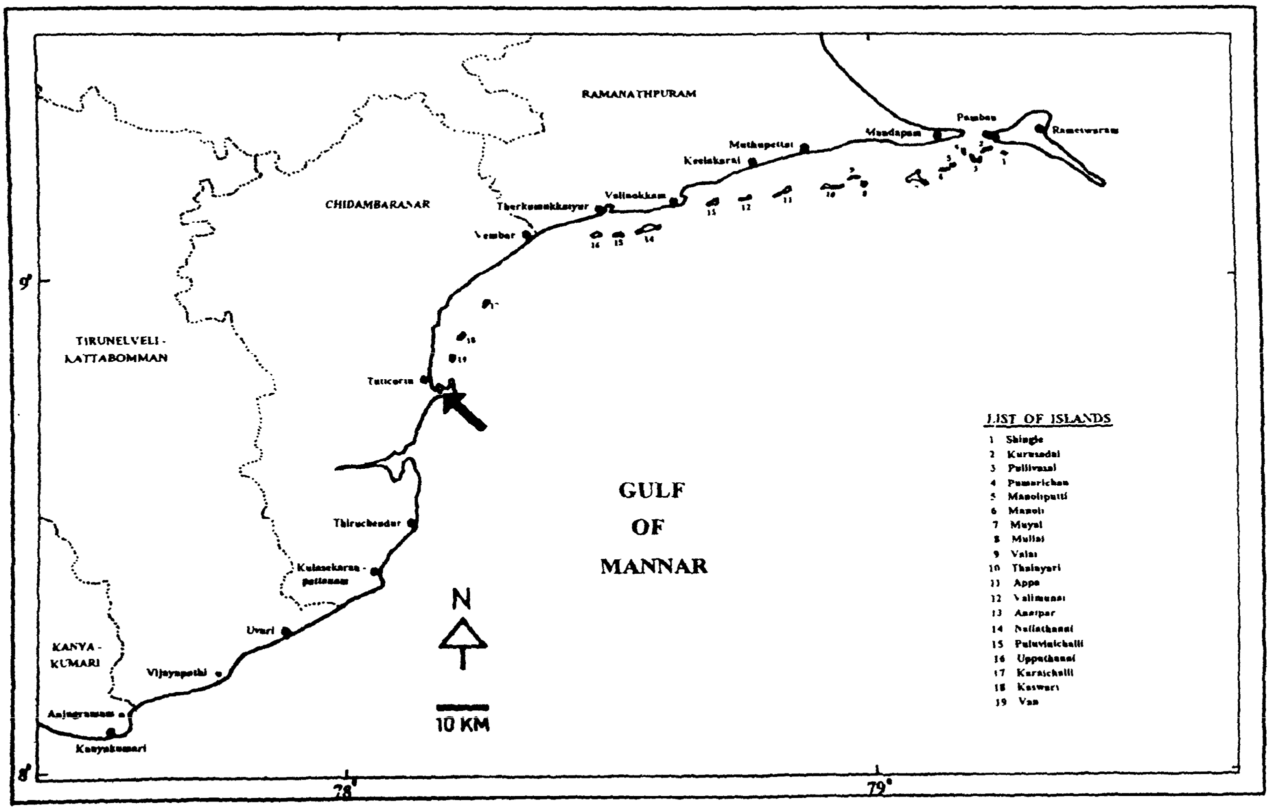


Fig.2 Collection locality of *Spigelia anthelmia* L. (at arrow) in the Gulf of Mannar Biosphere Reserve.

pink, tubular, 5 lobed; tube 7 15 x 1 1.5 mm; lobes ovate, acute, *ca* 1.5 mm long, dark pinkish towards tip, granulate along margins. Stamens 5, alternate with corolla lobes; filaments adnate to corolla tube below for *ca* 4 mm with an appendage almost in the middle, free for *ca* 1.5 mm above; anthers linear, *ca* 1 mm long, dorsifixed. Ovary superior, subglobose, *ca* 0.7 x 0.5 mm, bilocular; ovules 6 8 in each locule on axile placenta; style terminal, *ca* 2 mm long, cylindrical; stigma ovate, *ca* 4 mm long, pubescent near tip. Capsules subglobose, distinctly lobed with a persistent style base, *ca* 5 x 6 mm, papillose, greenish, loculicidally dehiscent; nutlets 4, on a receptacle; receptacle boat-shaped, *ca* 4 x 0.5 mm, white when dry; seeds 6 - 8 in each locule, pyriform, curved, *ca* 1.8 x 1 mm, rugose, blackish brown.

Fl. & Fr. : Nov.-Jan. (- ?).

Habitat : Moist sandy soil in shades.

Distrib. : Native of South America, naturalized in tropical West Africa and Malaysia (Leenhouts, 1962).

Notes : Earlier authors stated that the leaves at the apex are in a pseudowhorl of 4. It is now observed that the leaves at the apex may be 4 6. The pairs of leaves are at different levels with indistinct internodes but distinctly decussate without a semblance of a pseudowhorl. And it is the lowest pair of leaves that is connected by interpetiolar stipules. A distinct feature that has been overlooked by the earlier authors is that the stem is fluted.

Oomachan and Shrivastava (1987) recorded *S. anthelmia* for India from Madhya Pradesh. Even though they stated that it is a native of South America and naturalized in tropical Africa and Malaysia following Leenhouts (1962), they did not try to explain its presence in that part of the country nor did they mention about its naturalization. The ethnobotanical notes by the authors that a decoction of the roots is said to be used as an effective vermifuge locally might make a reader believe that the plant existed there for quite sometime to have some local use which appears unlikely.

At the Tuticorin harbour (Fig. 2) a patch of about one thousand plants was found in the timber yard under the shade of a *Prosopis juliflora* tree and between huge logs of Malaysian teak *(Dipterocarpus* sp.*)* in its proximity reportedly imported from Southeast Asia. *Boerhavia erecta, Cenchrus pennisetiformis, C. setigerus, Physalis minima* and *Sporobolus maderaspatanus* were the species found in association with the alien *S. anthelmia*. Though we had visited this area earlier it was collected only in November 1995 for the first time. It is likely to have established in the last one year or so by seeds got stuck to the bark of the logs imported from Southeast Asia. With the large number of robust plants now established and their profuse flowering and seed-setting the seeds are likely to be transported to various destinations of the logs from the Tuticorin harbour. As a result, the plant is likely to appear in various parts in Peninsular India in the near future.

Specimens examined : Tamil Nadu : Tuticorin harbour, timber yard, opposite fertilizer/cashew godown, 14.11.95, *S.A. Muthukumar* 104673; Tuticorin harbour, timber yard, opposite fertilizer/cashew godown, 30.1.96, *P. Daniel & P. Umamaheswari* 107354.

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MACARANGA BALAKRISHNANII MITRA AND CHAKR. —A NEW RECORD FROM WEST BENGAL

During the exploration work for the study of the Flora of Mahananda Wild Life Sanctuary, Darjeeling district, West Bengal, present authors found a medium size interesting tree, growing in Sukna locality which is within the area of the sanctuary. The above species is very rare in the area. The specimen has been critically examined and identified at CAL and it is exactly matching with the Holotype of *Macaranga balakrishnanii* Mitra & Chakraborty, a new record for Sikkim Himalaya published in J. Econ. Tax. Bot. 15(2) : 465-466. 1991.

The present species is not only a new record for West Bengal but a second collection in India after the type. Further investigation and research may reveal the occurrence of this rare taxon in other places in the hilly regions of Darjeeling district, Nepal, Bhutan & also in Sikkim.

Specimens examined : Sikkim, Sesama Reserve Forest, June 1985, P.Basu 8377 (Cal, Holotype) ; West Bengal, Darjeeling district, Sukna (Mahananda reserve Forest), 12.5.1995, S. Chandra & party 10900/17.

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SOLANUM DIPHYLLUM L. — A NEW RECORD FOR INDIA

This paper records the occurrence of this species from India for the first time. While confirming the specimen sent to Sandra Knapp of The Natural History Museum, London, a specialist of the genus *Solanum* L. sect. *Geminata* (G. Don) Walpers, to which it belongs, for examination she states in a communication dated 04 oct. 1995 "....It is a specimen of *Solanum diphyllum* L., a Neotropical species (native to the drier parts of Southern Mexico) which is widely escaped in the Old World. I have not seen any specimens from India as yet, so yours is a first ;....". This species is very allied to the native Indian species *Solanum spirale* Roxburgh which occurs in North Bengal to Myanmar and Bangladesh, but differs in its completely glabrous leaves (*S. spirale* has tiny tufts of hairs in the vein axils on the abaxial surfaces) and its much smaller, orange fruits which are held on erect pedicels. The occurrence of this species is not so common and in adventive condition.

A detailed description with figure is given for easy identification.

Solanum diphyllum Linn., Sp. Pl. 184. 1753. Figs. 1-4.

Shrub 1 m tall, unarmed, glabrous, stem erect, slender, surface glandular. Glabrous Sympodial units difoliate, geminate. Leaves unequal in shape and size in each pair. Major leaves obovate to obovate-elliptic, the blade 3-4. 5 cm. long, 10. 3-2.3 cm wide with 6-7 pairs of primary veins, apex obtuse, base cuneate, margin entire ; petiole subsessile to 4 mm long ; minor leaves rounded to ovate-rounded, the blade 0.5-1.8 cm. long, 0.5-1.5 cm wide, apex rounded, base cuneate ; petiole subsessile to 2 mm long. Inflorescence opposite the leaves, simple, slender,